

CLAIMS

What is claimed is:

- 5 1. A network communication system, comprising:  
a first device having a first data bandwidth requirement, said first device  
configured to transmit and receive data at different data rates;  
a second device having a second data bandwidth requirement, said second  
device configured to transmit and receive data at different data rates and  
10 configured to communicate with said first device; and  
a master transceiver configured to manage data communications between  
said first device and said second device.
2. The network communication system of claim 1, wherein said  
15 communication between said first device and said second device is configured to  
be performed in a wireless environment.
3. The network communication system of claim 1, wherein said transmitted  
and received data rates between said first device and said second device varies as a  
20 function of noise or reflection.
4. The network communication system of claim 1, wherein said  
communications between said first device and said second device is configured to  
operate in an ultra wide band environment.

5. A network communication system, comprising:  
a first slave transceiver configured to communicate a plurality of TDMA  
data packets at different data rates;  
a second slave transceiver configured to communicate a plurality of TDMA  
5 data packets at different data rates to said first slave transceiver; and  
a master transceiver configured manage data communications between said  
first slave transceiver and said second slave transceiver.

6. The network communication system as recited in claim 5 wherein said  
10 master transceiver is further configured to synchronize communications between  
said first slave transceiver and said second slave transceiver.

7. The network communication system as recited in claim 5 further  
comprising a third transceiver in communications with said master transceiver,  
15 said third transceiver configured to communicate a plurality of TDMA data  
packets at different data rates.

8. The network communication system as recited in claim 5, wherein said  
communication between said first slave transceiver and said second slave  
20 transceiver is configured to be performed in a wireless environment.

9. The network communication system as recited in claim 5, wherein said  
plurality of TDMA data packet communication between said first slave transceiver  
and said second slave transceiver varies as a function of noise or reflection.

10. The network communication system as recited in claim 5 wherein said communication between said first slave transceiver and said second slave transceiver is configured to operate in an ultra wide band environment.

5 11. A master transceiver configured to transmit ultra wide band base band pulses, comprising:

at least one slave transceiver in communication with the master transceiver;  
and

a framing control unit housed by said master transceiver, said framing

10 control unit configured to generate and maintain a plurality of TDMA frames, each of said plurality of TDMA frames having a plurality of slots, each of said plurality of slots having a start of frame slot, said start of frame slot configured to identify each of said plurality of TDMA frames to said at least one slave transceiver.

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12. The master transceiver recited in claim 11 further comprising a Medium Access Control protocol in communication with said framing control unit, said Medium Access Control protocol configured to define each of said plurality of TDMA frames.

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13. The master transceiver recited in claim 11 wherein said communications between said master transceiver and said at least one slave transceiver is configured to provide for isochronous data communications.

14. The master transceiver recited in claim 11 wherein said communications between said master transceiver and said at least one slave transceiver is configured to provide for asynchronous data communications.
- 5 15. The master transceiver recited in claim 11 wherein said start of frame slot generated by said master transceiver further comprises a synchronization slot configured to synchronize communications between said master transceiver and said at least one slave transceiver.
- 10 16. The master transceiver recited in claim 15 wherein said start of frame slot generated by said master transceiver further comprises a timestamp slot which is configured to permit said master transceiver to modify each of said plurality of TDMA frames at a predetermined time interval.
- 15 17. A transceiver, comprising:  
a data modulation unit configured to generate a plurality of signals having variable pulse repetition frequencies and different modulation techniques;  
a transmitter coupled to said data modulation unit, said transmitter configured to generate a pulse stream according to said data modulation unit;  
20 an antenna coupled to said transmitter, said antenna configured to transmit a plurality of ultra wide band base band signals; and  
a receiver configured to detect and demodulate said ultra wide band base band signals.

18. The transceiver recited in claim 17, wherein said data modulation unit comprises a pulse repetition frequency module configured to permit varying pulse repetition frequencies to be transmitted.

5 19. The transceiver recited in claim 17, wherein said data modulation unit comprises a transmit module configured to generate said plurality of signals which are communicated to said transmitter.

10 20. The transceiver recited in claim 19, wherein said transmit module is configured to modulate signals for different modulation techniques.

15 21. The transceiver recited in claim 17, where said transmitter further comprises a pulse generator system configured to generate a plurality of pull-up signals and a plurality of pull-down signals.

22. The transceiver recited in claim 21, wherein said transmitter further comprises a transistor drive system, said transistor drive system configured to communicate said plurality of pull-up signals and said plurality of pull-down signals to said antenna.

20 23. The transceiver recited in claim 17, wherein said receiver further comprises a front end configured to receive and amplify said ultra wide band base band signal generated by said transmitting antenna.

24. The transceiver recited in claim 23 wherein said receiver further comprises a pulse detection unit coupled to said front end, said pulse detection unit configured to detect a plurality of pulse detection pulses from said received and amplified ultra wide band base band signals.

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25. The transceiver recited in claim 24 wherein said receiver further comprises a data processing unit coupled to said pulse detection unit, said data processing unit configured to retrieve a plurality of data from said plurality of pulse detection pulses.

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26. The transceiver recited in claim 25 wherein said data processing unit further comprises a divider circuit housed within said data processing unit, said divider circuit configured to provide the pulse repetition frequency for sampling by said data processing unit.

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27. The transceiver recited in claim 25 wherein said data processing unit further comprises a decoder housed within said data processing unit, said decoder configured to detect different modulation techniques.

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